Department of Energy
Western Area Power Administration
Desert Southwest Customer Service Region
P.O. Box 6457
Phoenix, AZ 85005-6457

MAR - 5 2004

Dear Parker-Davis Project Customer:

Western has received a letter from K.R. Saline and associates requesting flexibility to allow the Town of Thatcher and the Town of Wickenburg to implement their Parker-Davis Project (P-DP) Firm Electric Service (FES) allocations at the beginning of any Fiscal Year prior to October 1, 2008. The Town of Fredonia, Yuma Irrigation District, and Fort Mohave could also potentially benefit from early implementation of their post-2008 allocations. Western has evaluated this request, and the summary analyses attached address the impacts on P-DP capacity, energy and associated transmission. These summaries describe the near term hydrological conditions, the capacity impacts, and the estimated energy generation from P-DP. The capacity should be available at all times and should not cause any additional capacity purchases. However, during the near term time period between now and 2008, the effect of the extra energy to these five customers is likely to result in a reduction of excess energy offerings and increased energy purchases.

There are several alternative methods that can be used to fulfill this request. Each alternative has issues that must be considered and addressed before a decision to implement is made.

One alternative would be to implement the rounded up allocations as part of the P-DP remarketing process. Under this alternative, there would be additional revenue to P-DP for both capacity and energy. The cost of additional energy purchases would be included as part of the rate to be paid for by all P-DP customers. Other issues to be considered as part of this alternative include whether or not to implement the requirement to begin payment for the Replacement Advances Reconciliation Surcharge and to revise proportionate shares for funding under the P-DP Generation Advancement of Funds Contract prior to October 1, 2008. In addition, the decision to increase these allocations effective October 1, 2008 was made as part of a public process, and Western would need to determine what process is required in order to revise the decision published in the May 5, 2003 Federal Register Notice.

Another alternative would be to implement this request under the existing Marketing Plan in accordance with Part VII, Section C of the Conformed General Consolidated Power Marketing Criteria for Boulder City Area Projects, wherein, Western has the flexibility to offer short-term agreements to the extent that capacity and energy in excess of long-term contract commitments become available and as conditions permit. This alternative would be implemented using pass through cost contracts separate from the Firm Electric Service contract with each of the five customers listed above. There are several different ways that these separate contracts could be structured, as described below:

- Offer a separate pass through contract, whereby if P-DP has the capacity and energy available Western would sell it to the five customers at the current P-DP rate in effect, and collect the revenue into the project. If the capacity and/or energy is unavailable and Western has to purchase on the spot market, we would pass those costs on to the five customers. This option brings revenue back to the project, but could also lessen the amount of excess energy offered to the P-DP customers if it becomes available.

- Offer a separate contract whereby Western would sell the P-DP capacity to the five customers at the current P-DP rate in effect, but would purchase the associated energy on the spot market. Since the risk of having the additional capacity is negligible this would provide a revenue stream back to the project and also provide a benefit to the five customers. With the associated energy being purchased on the spot market there is no impact to the amount of excess energy offered to the P-DP customers if it becomes available. This contract could also be tailored so that the capacity is evaluated on a yearly basis and only offered when it is projected to be available, which would help lessen the risk of a capacity purchase to the remaining P-DP customers.

Western is dedicated to helping all customers receive reliable power with the least economic impact. Please provide your comments on the alternatives listed above by March 19, 2004. If you would like to discuss this issue further in an informal meeting, please include that request in your comments back to Western.

If you have any questions or would like to discuss this further, you may contact either Penny Casey at 602-352-2585 or myself at 602-352-2555.

Sincerely,

Jean Gray
Assistant Regional Manager
for Power Marketing

Enclosures (2)

Projected Parker-Davis Generation FY2005-FY2008
&
Energy for Rounded Allocations

Background

Several existing Parker-Davis Firm Electric Service (FES) contractors are to receive an increased allocation as of October 1, 2008 as a result of the extension of the FES contracts published in the May 5, 2003 FRN. A request has been made to evaluate the impact of providing these allocation increases at the time of the effective date of the contract amendments of October 1, 2004 (FY2005). This paper will discuss the probability of the additional energy for the increased allocation being available from Parker-Davis generation from FY2005 through FY2008.

Generation & Energy Requirements

The existing annual energy obligation for Parker-Davis FES and Project Use is 1345.8 GWh. The energy required to meet the increased allocation would be about 6.1 GWh, thus it would require total generation of 1351.9 GWh to meet this additional load.

Generation for FY05 is projected to be 1338 GWh (USBR 24-month study). This is based on water deliveries for a Normal Water Year level of 9.0 MAF to the Lower Basin States and Mexico. (Note: The 2005 Water Year will almost certainly be declared a Partial Domestic Surplus based upon Mead elevation at the end of 2004. However, at this time it is expected that MWD will not take surplus water due to sufficient in-state storage. Thus only Normal deliveries are anticipated.) This will be the basis used in this report for an average Normal water year generation. The head at Davis and Parker are essentially constant between years and the actual generation varies almost entirely with the water deliveries. The Normal year water deliveries vary only about +/- 1% due mostly to overruns or underruns or slight variations in the net of inflow and losses between Davis and Mexico.

During a Partial Domestic Surplus year (Mead above 1125 ft.), there would be about 140 KAF of additional releases through Davis generating about 17.4 GWh of additional energy assuming that MWD takes the surplus water. The average energy during a Partial Domestic Surplus would be 1338 GWH + 17.4 GWh or 1355.4 GWh. This would be subject to the same +/- 1% variation as a Normal year. Thus, there would be sufficient generation for the increased allocation during the average Partial Domestic Surplus year, but not at the lower end of the range.

For a Full Domestic Surplus Year (Mead above 1145 ft.), there would be at least 400 KAF of additional releases through Davis generating at least 49.6 GWh of additional energy assuming MWD takes the surplus water. This would always be sufficient to supply the additional energy associated with the increased allocations.

Therefore the probability of having the additional energy available for a Normal, Partial Surplus, or Full Surplus Water Year are as follows:

Normal Water Year

Range = 1324.6 to 1351.4 GWh (1338 GWh +/- 1%)

Between 1324.6 to 1345.8 GWh there is no additional energy (79% probability)

Between 1345.8 to 1351.4 GWh there is partial energy available (21% probability)

Partial Domestic Surplus

Range = 1341.8 to 1369.0 GWh (1355.4 GWh +/- 1%)

Between 1341.8 to 1345.8 GWh there is no additional energy (15% probability)

Between 1345.8 to 1351.9 GWh there is partial energy available (22% probability)

Between 1351.9 to 1369 GWh there is sufficient energy available (63% probability)

Full Domestic Surplus

100% probability of sufficient energy available

Probability of Normal and Surplus Water Years

Based on current hydrological conditions there is a virtual 100% probability of a Partial Surplus year in FY05. The only condition that could cause this to change would be if MWD were to change their water order and take the surplus water available to them. This is not anticipated, however, even if this did happen there would only be a very slight chance of a Normal water year in FY05.

For the remaining years, the USBR 24-month study numbers were used to determine projected storage conditions at the end of 2004. After 2004, Lake Mead will drop below 1125 ft. elevation unless there is sufficient Colorado River Basin runoff to supply the annual consumptive use, plus refill Lake Powell sufficiently to make equalization releases to Mead. Based on the end of 2004 conditions, there will be a deficit of about 5.5 MAF in depleted storage and dry soil conditions for Mead to remain above 1125 ft. elevation (partial surplus). An additional 3.2 MAF is required to fill Mead to 1145 ft. elevation (full surplus). The runoff would need to be sufficient to make up these deficits in additional actual water use in order to reach these surplus levels.

Using historic traces of Colorado River runoff, the probabilities for each year are as follows:

Year	Normal	Partial Surplus	Full Surplus
FY05		100.00%	
FY06	85.42%	11.46%	3.13%
FY07	75.79%	10.53%	13.68%
FY08	70.21%	10.64%	19.15%

Probability of Additional Energy

Multiplying out the probabilities of having Normal, Partial or Full Surplus by the probabilities of having sufficient energy for each type of water supply year yields the overall probability of having sufficient energy to supply the increased allocation from generation. The probabilities for each year are as follows:

Year	No Energy	Partial Energy	Full Energy
FY05	15.0%	22.0%	63.0%
FY06	69.2%	20.5%	10.3%
FY07	61.5%	18.2%	20.3%
FY08	57.1%	17.1%	25.9%
Average	**50.7%**	**19.4%**	**29.9%**

Summary

Based upon the current hydrological conditions on the Colorado River, it is probable that there will not be sufficient energy generated to supply the energy associated with increased allocations from FY2005 through FY2008. There is about a 50% chance that none of the energy will be available in a given year and only about a 30% chance of the full energy being available.

These percentages assume that MWD will take the surplus water when it is available to them. Should MWD not take the surplus water in a given year, then the water deliveries would default to the Normal year values. Under Normal year deliveries there is only about a 20% probability of any additional energy available.

Projected Parker-Davis Capacity Available
FY2005-FY2008

Background

The Parker-Davis Firm Electric Service (FES) capacity to be marketed as of October 1, 2008 will increase as a result of the extension of the FES contracts and creation of a new resource pool as published in the May 5, 2003 FRN. A request has been made to evaluate the impact of providing this capacity increase at the time of the effective date of the contract amendments of October 1, 2004 (FY2005). This paper will discuss the probability of the additional capacity allocation being available from Parker-Davis generation from FY2005 through FY2008. This paper does not address any associated energy with the increased capacity.

Current & Future Marketed Capacity

The existing capacity obligation for Parker-Davis FES and Project Use is 283.015 MW summer season, 218.358 MW winter season. The capacity marketed post-2008 will be 299.706 MW summer season and 231.165 MW winter season, an increase of about 16.7 MW and 12.8 MW respectively. The current marketed capacity was based upon total generator capacity of 300 MW at Davis and Parker and the post-2008 marketed capacity was based upon total generation capacity of 315 MW. Thus the margin of generator capacity over marketed capacity would be little changed post-2008 and should have little effect on ability to fulfill the capacity requirements from federal generation.

The post-2008 generation capacity of 315 MW assumed 4 Davis units at 51.75 MW, one Davis unit at 48 MW, and all Parker units at 30 MW. These are the current ratings of the units at Davis. However, the Parker units are currently 27 MW each. The post-2008 values assumed that the Parker turbine runners would be replaced about the start of the new allocations. The current total generation capacity is 309 MW. Over the period of FY2005 through FY2008, there should be on average one turbine replaced at Parker, increasing the average generation capacity available to 310.5 MW.

The impact of increased Parker-Davis capacity requirements were compared to the available generation capacity using calendar year 2003 data. Addition of capacity to serve the rounded up allocations (only about 1 MW) would have no impact on the hours where federal generation capacity was not sufficient to meet loads and reserves. Increases of capacity up to 10 MW would have a moderate impact. During this interim period, increases in capacity up to the post-2008 marketed amount would have significant impact (more than doubling the number of hours where federal generation did not have sufficient capacity). This is a result of the lesser Parker generation capacity for this interim period, and also because of lower capacity from other federal generation available due to poor hydrological conditions.

Transmission

In order to utilize any additional capacity, additional transmission capacity would be required for any contractors with increased capacity.

Summary

Additional capacity for the rounded up contractors would have no impact on the ability to meet the capacity requirements from federal generation. Providing capacity to the contractors in excess of this amount would gradually impact the ability to supply the capacity from federal generation. The impact increases more rapidly as the total capacity increase exceeds 10 MW.

Additional transmission capacity would need to be obtained for any additional capacity provided to the contractors.